ARH-LD-132
Informal Report

-201

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Geology of the 241-C Tank Farm

April 1976

W. H. Price

K. R. Fecht

Environmental Engineering Section
Research Department
Research and Engineering Division

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and Development Administration
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Atlantic Richfield Hanford Company
Richland, Washington 99352

GEOLOGY OF THE 241-C TANK FARM

by

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K. R. Fecht

Environmental Engineering Section
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ATLANTIC RICHFIELD HANFORD COMPANY
RICHLAND, WASHINGTON 99352

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INTRODUCTION

A series of maps have been compiled to document the structure and stratigraphy of the sediments underlying the high-level radioactive waste storage tank farms located within the Energy Research and Development Administration Hanford Reservation. The primary purpose of these maps is to provide basic geologic information to be utilized to evaluate the impact of suspected and confirmed tank leaks. For convenience of usage map sets for each tank farm have been published in separate document packets (see Table I). The contents of this packet (see Table II) contain maps compiled only for the 241-C Tank Farm.

TABLE I

TANK FARM GEOLOGY DOCUMENTS AVAILABLE
AS OF APRIL, 1976*

Title	Document Number
Geology of the 241-A Tank Farm	ARH-LD-127
Geology of the 241-AX Tank Farm	ARH-LD-128
Geology of the 241-B Tank Farm	ARH-LD-129
Geology of the 241-BX Tank Farm	ARH-LD-130
Geology of the 241-BY Tank Farm	ARH-LD-131
Geology of the 241-C Tank Farm	ARH-LD-132
Geology of the 241-S Tank Farm	ARH-LD-133
Geology of the 241-SX Tank Farm	ARH-LD-134
Geology of the 241-T Tank Farm	ARH-LD-135
Geology of the 241-TX Tank Farm	ARH-LD-136
Geology of the 241-TY Tank Farm	ARH-LD-137
Geology of the 241-U Tank Farm	ARH-LD-138
Generalized Geology of the 241-SY Tank Farm	ARH-LD-139

*Additional documents will be completed as new tank farms are built and well monitoring networks installed.

TABLE II

241-C TANK FARM GEOLOGY MAPS

Title	Drawing Number
241-C Tank Farm Geologic Map Legend and Plot Plan	H-2-38983
241-C Tank Farm Geologic Characterization Cross Section A-A'	H-2-70496
241-C Tank Farm Geologic Characterization Cross Section B-B'	H-2-70497
241-C Tank Farm Geologic Characterization Cross Section C-C'	H-2-70498
241-C Tank Farm Geologic Characterization Cross Section D-D'	H-2-70499
241-C Tank Farm Geologic Characterization Cross Section E-E'	H-2-70500
241-C Tank Farm Geologic Characterization Cross Section F-F'	H-2-70501
241-C Tank Farm Geologic Characterization Cross Section G-G'	H-2-70502
241-C Tank Farm Geologic Characterization Cross Section H-H'	H-2-70504
241-C Tank Farm Geologic Characterization Cross Section I-I'	H-2-70503
241-C Tank Farm Geologic Characterization Base of Backfill	H-2-70495

PROCEDURES

During the drilling of 26 dry wells and 2 water wells in and around the 241-C Tank Farm, sediment samples were collected from one to 5-foot depth intervals. Information utilized to prepare this series of maps was obtained by the analysis of these samples, numbering approximately 600.

Each sediment sample was quantitatively analyzed according to grain size and $CaCO_3$ content. Size analysis was carried out utilizing a nest of 9 sieves selected for coincidence with the Wentworth (1922) grain size nomenclature (see H-2-38983). The $CaCO_3$ content of each sample was determined utilizing a semiquantitative CO_2 displacement method (Horwitz, 1970). Size and $CaCO_3$ data was input into the Rocksan Computer Program (Parr, 1974) which categorized each sediment sample into 1 of 19 classes (classification scheme modified after Folk, 1968; see H-2-38983). After analysis, each sample was visually examined to aid in further characterization. Each sample was subsequently stored in the Hanford Well Library for future reference.

For convenience of usage, the geologic maps were prepared at the same scale (1" = 16') as drawing H-2-36941 (Wells in 241-C Farm As-built). Steps outlining the preparation of the maps are listed in Figure 1.

GENERALIZED GEOLOGY

Included within this section is a brief discussion of the geology underlying the 241-C Tank Farm. The stratigraphic descriptions included, along with the Glossary (see page 9), are designed only to provide sufficient information to permit a general understanding of the Tank Farm maps presented. For a more detailed discussion of the regional geologic setting of the 241-C Tank Farm, the reader is referred to articles listed in the Selected References (see page 11).

The 241-C Tank Farm is underlain by three major stratigraphic units (see Figure 2); (1) basalt of the Columbia River Group which forms the bedrock beneath the area; (2) semiconsolidated sediments of the Ringold Formation which directly overlie the bedrock; and (3) unconsolidated sand, silt, and gravel, collectively termed glaciofluvial sediments. A more detailed description of the character of these units underlying the Tank Farm follows.

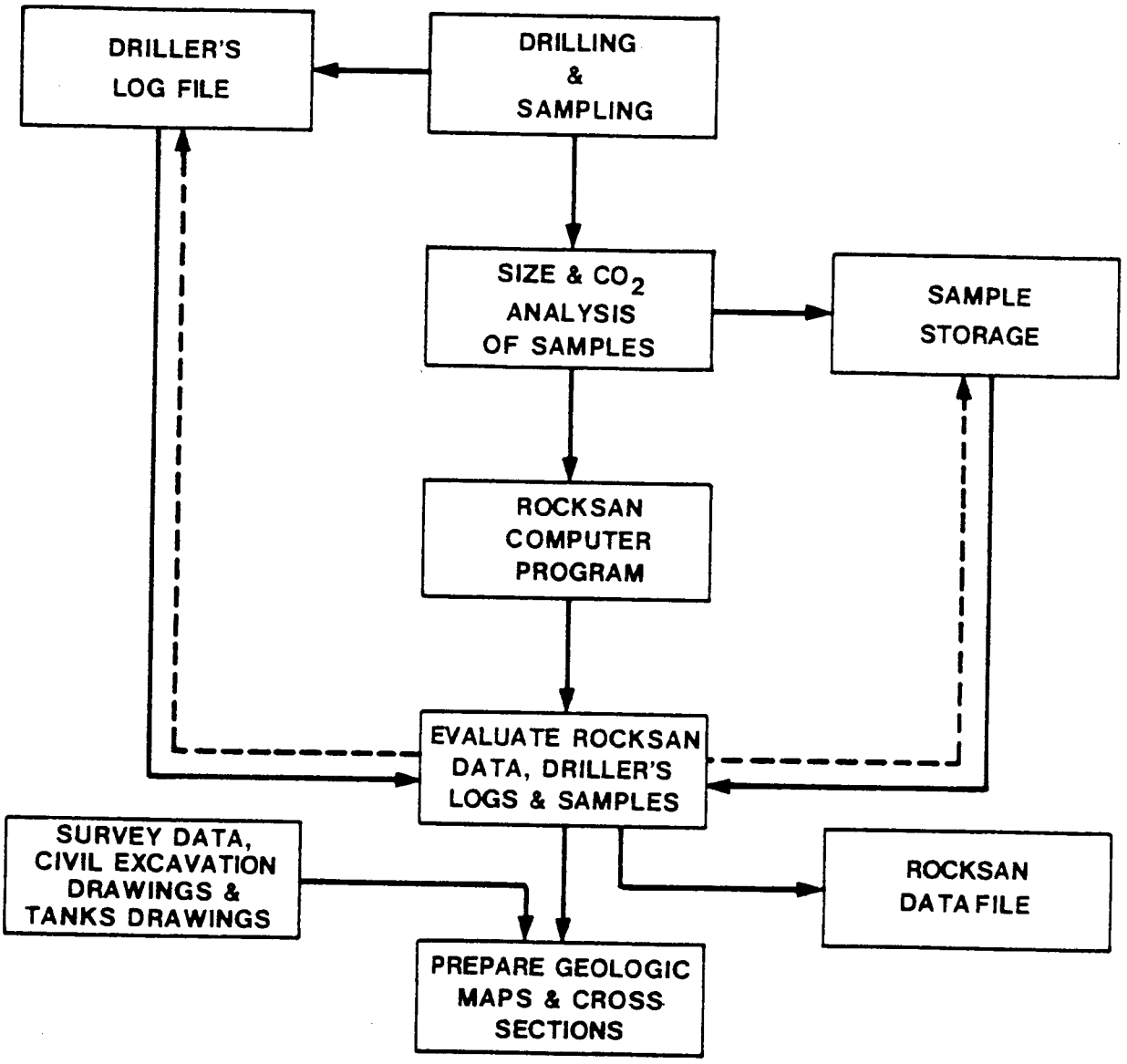

FIGURE 1

STEPS OUTLINING THE PREPARATION OF TANK FARM GEOLOGY MAPS

ERA	PERIOD	EPOCH	YEARS B. P.	STRATIGRAPHIC NAME AND/OR UNIT		LITHOLOGY DESCRIPTION
CENOZOIC	QUATERNARY	MODERN		BACKFILL		VERY POORLY SORTED GRAVEL, SAND & SILT
		PLEISTOCENE	30	GLACIOFLUVIAL SEDIMENTS		FAIRLY WELL SORTED FLUVIAL SAND & SILT WITH SOME GRAVEL
				EOLIAN SILT		FINE SAND & SILT DERIVED FROM THE UPPER RINGOLD
	TERTIARY	PLIOCENE	1,000,000	RINGOLD FORMATION	UPPER RINGOLD	WELL SORTED FLUVIAL OR LACUSTRINE SILT & SAND WITH SOME CALCAREOUS LAYERS
					MIDDLE RINGOLD	FLUVIAL GRAVEL & SAND VARIABLY CEMENTED WITH CALCIUM CARBONATE & SILICA
		MIOCENE	11,000,000	COLUMBIA RIVER BASALT GROUP	ELEPHANT MOUNTAIN MEMBER	DENSE BLACK EXTRUSIVE IGNEOUS ROCK, MICRO VESICULAR, BRICK BAT ENTABULATURE & NO COLUMNADE
					RATTLESNAKE RIDGE MEMBER	TUFFACEOUS SANDSTONE
					POMONA MEMBER	DENSE BLACK EXTRUSIVE IGNEOUS ROCK, SCATTERED OLIVINE PHENOCRYSTS, UPPER & SOMETIMES BASAL ENTABLATURE WELL DEVELOPED, FAN JOINTING IN COLUMNADE

WHP/KRF 1976

FIGURE 2

GENERALIZED STRATIGRAPHIC COLUMN FOR
THE 200 AREA TANK FARMS

COLUMBIA RIVER BASALT GROUP

About 20 million years ago a series of fissures opened around the periphery of the subsiding Pasco Basin and large volumes of basaltic lava poured out over the land surface. The highly fluid lava was extruded intermittently from these fissures until approximately 8 million years ago. At the cessation of Columbia River Basalt volcanism, the basin had been filled with more than 12,000 feet of basalt.

The surface of the Columbia River Basalt lies beneath 241-C Tank Farm at an elevation of approximately 330 feet (all elevations based on feet above mean sea level measured at approximate center of Tank Farm). On the 241-C Tank Farm maps, this surface occurs approximately 30 feet below the bottom border of the prepared cross sections.

RINGOLD FORMATION

Following the cessation of Columbia River Basalt volcanism the ancestral Columbia River transported sediments from the surrounding highlands into the Pasco Basin where they accumulated to form the Ringold Formation. Beneath the Hanford Reservation, this formation is up to 1200 feet thick and can generally be divided into three units on the basis of lithology; the clays and silts of the lower Ringold unit; the pebbles and cobbles of the middle Ringold unit; and the silts and fine sands of the upper Ringold unit.

Within the region beneath 241-C Tank Farm, the total thickness of the Ringold Formation is estimated to be 20 feet. Sediments samples were not available to adequately describe the Formation.

GLACIOFLUVIAL DEPOSITS

During the close of the Ice Age, approximately 20,000 years ago, a continental ice sheet covered much of northern Washington. As the ice sheet retreated northward, the breakup of ice dams resulted in catastrophic floods in which large volumes of glacial meltwater were released. During one of these floods, over 500 cubic miles of water is estimated to have poured into the Pasco Basin at a rate of more than 9 cubic miles of water per

hour. Sediments deposited within the basin by such flooding now comprise the glaciofluvial unit. The characteristic variability of sediment size and degree of sorting within this unit can be attributed to changes in water velocity and water level which occurred during the flooding process.

Glaciofluvial deposits are found beneath the 241-C Tank Farm between elevations 330 and 607 feet. The 277-foot thick section of these deposits consists predominently of very coarse to coarse sand with some silt and pebbles. Table III summarizes the grain size and $CaCO_3$ values of the glaciofluvial sediments.

TABLE III

TYPICAL GRAIN SIZE AND CALCIUM CARBONATE VALUES FOR MAJOR GLACIOFLUVIAL LITHOLOGIES BENEATH 241-C TANK FARM

Lithology	%Pebbles & Cobbles	% Sand					%Silt & Clay	$\%CaCO_3$
		Very Coarse	Coarse	Medium	Fine	Very Fine		
Slightly Silty Very Coarse to Coarse Sand to Very Coarse to Coarse Sand	1	20	43	14	7	5	10	2.0
Slightly Pebbly Very Coarse to Coarse Sand	7	29	31	17	7	4	5	2.0
Pebbly Very Coarse to Coarse Sand	15	26	33	13	6	3	4	1.6
Slighty Silty Coarse to Medium Sand to Coarse to Medium Sand	3	14	37	24	9	4	9	1.3
Slightly Silty Very Coarse to Coarse Sand to Very Coarse to Coarse Sand	2	24	31	16	9	9	9	1.2
Slightly Silty Medium Sand to Coarse to Medium Sand	3	10	28	33	11	6	9	0.8
Very Coarse to Coarse Sand	1	28	45	14	5	2	5	0.8
Slightly Pebbly Very Coarse to Coarse Sand	8	27	31	15	6	4	9	0.7

CLASTIC DIKES

Throughout the Pasco Basin, clastic dikes are found cross-cutting the Ringold Formation and glaciofluvial sediments. These dikes, which range from a few inches to several feet in width, are known to exist to depths of more than 100 feet below the ground surface. Generally, the dikes are composed of fine silts to coarse sands. The origin of the clastic dikes is still in refute and will not be discussed here (see Selected References). Identification of clastic dikes by drilling is difficult and although some dikes were detected in the 241-C Tank Farm, they could not be mapped.

BACKFILL MATERIAL

In preparation for tank construction, glaciofluvial material was excavated at the 241-C Tank Farm site. This material, consisting predominantly of cobbles, pebbles, and coarse to medium sands with some silts, was subsequently used as backfill from the base of the completed tanks (607 feet) to the ground surface (646 feet). An inherent characteristic of the backfill is its poor sorting. Grain size and $CaCO_3$ values for the backfill are found in Table IV.

TABLE IV

TYPICAL GRAIN SIZE AND CALCIUM CARBONATE VALUES FOR THE 241-C TANK FARM BACKFILL

Lithology	%Pebbles & Cobbles	% Sand					%Silt & Clay	$\%CaCO_3$
		Very Coarse	Coarse	Medium	Fine	Very Fine		
Gravelly Very Coarse to Medium Sand to Slightly Gravelly Very Coarse to Medium Sand	17	26	17	10	9	7	14	1.6

WATER TABLE

The water table beneath the 241-C Tank Farm is located within the glaciofluvial sediments at an elevation of 403 feet, 204 feet below the base of the tanks. For further information concerning contours on the water table beneath 200 East Area the reader is referred to drawings H-2-38398 (200 East Area Water Table Map) and H-2-38399 (200 East Area Depth to Water Map).

GLOSSARY

Basalt. Fine-grained, dark-colored, extrusive igneous rock.

Calcareous. Containing calcium carbonate.

Caliche. Gravel, sand, or silt cemented by calcium carbonate.

Cement. Chemically precipitated material occurring in the interstices between particles of gravel, sand, or silt.

Clastic. A textural term applied to rocks composed of fragmental material derived from pre-existing rocks.

Clastic dike. A tabular body of clastic material transecting the bedding of a sedimentary formation, representing extraneous material that has invaded the containing formation along a crack.

Dip. The angle at which a stratum or any planar feature is inclined from the horizontal.

Eolian. A formation formed by, or deposited from, the wind or currents of air.

Fluvial. Produced by the action of a river or stream.

Formation. The ordinary unit of geologic mapping consisting of a large and persistent stratum of some one kind of rock.

Glaciofluvial. Pertaining to streams flowing from glaciers or to the deposits made by such streams.

Grain. The particles or discrete crystals which comprise a rock or sediment.

Group. A local or provincial subdivision of a series, based on lithologic features and contains two or more formations.

Lacustrine. A formation deposited in a lake environment.

Lava. Fluid rock such as that which issues from a volcano or a fissure in the earth's surface and the same material solidified by cooling.

Lithology. The description of rocks or sediments on the basis of such characteristics as color, minerologic composition and grain size.

Sediment. Descriptive term for gravel, sand, and silt transported from their sources and deposited by air, water, or ice.

Sieve. A utensil having many small perforated openings, used to separate fine particles from coarser ones.

Siliceous. Containing silica.

Silt. Fine grained material between sand and clay in size.

Sorting. The grain size range of the sediments.

Stratigraphy. The part of descriptive geology of an area that pertains to the discrimination, character, thickness, sequence, age and correlation of the sediments and rocks of the area.

Subaerial. Formed, existing, or taking place on the land surface.

Unconformity. A surface of erosion or nondeposition that separates younger strata from older strata.

Water table. The upper surface of a zone of saturation except where that surface is formed by an impermeable body.

Winnowing. Separation of fine particles from coarser ones by wind action.

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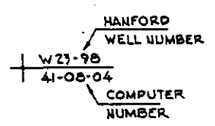
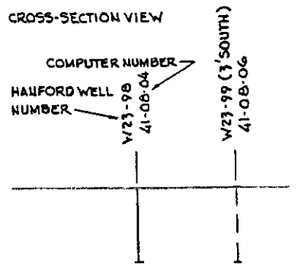
1- WELL DESIGNATION
WELL NUMBERS PREFIXED BY 299-

PLOT PLAN VIEW



CROSS-SECTION VIEW



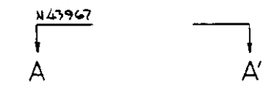
SOLID LINE ON CROSS-SECTION.

DASHED LINE WHEN PROJECTED TO CROSS-SECTION: DISTANCE AND DIRECTION FROM CROSS-SECTION ARE GIVEN.

2- COORDINATES
BASED ON HANFORD COORDINATE SYSTEM.

3- PLANE OF CROSS-SECTION

PLOT PLAN VIEW



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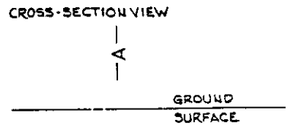


4- TANK DESIGNATION
TANKS PREFIXED BY 241-

5- CONTACT BETWEEN LITHOLOGIES

SOLID LINE WHERE ACCURATELY KNOWN

DASHED LINE IF APPROXIMATELY KNOWN

QUERIED DASHED LINE WHERE INFERRED

BASE OF BACKFILL

6- LENSES OR STRINGERS

DISCONTINUOUS SEDIMENTS LESS THAN TWO FEET THICK

DISCONTINUOUS SEDIMENTS GREATER THAN TWO FEET THICK

7- WATER TABLE

CROSS-SECTION VIEW — WATER TABLE (12/75)

DATUM - MEAN SEA LEVEL — DATE WATER LEVEL MEASUREMENTS TAKEN

8- HORIZONTAL AND VERTICAL SCALES

VERTICAL EXAGGERATION - 1X
VERTICAL SCALE - FEET ABOVE MEAN SEA LEVEL

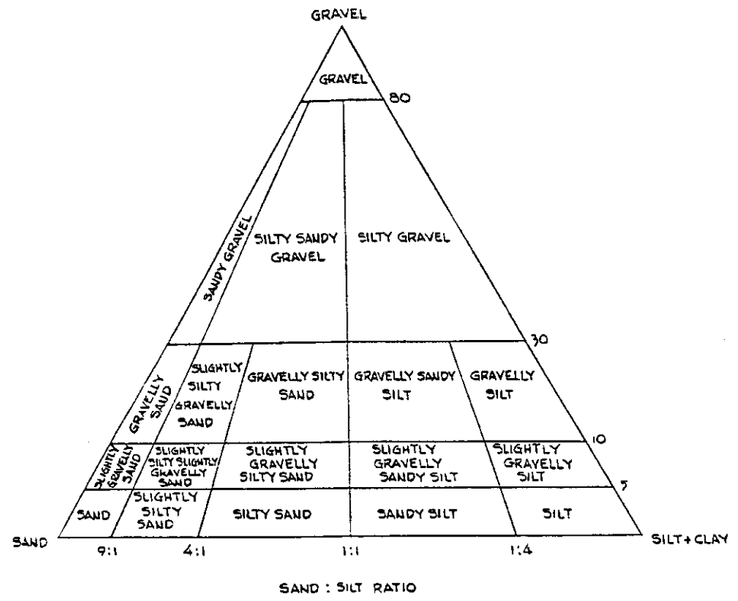
20 10 0 10 20 30 40 50

1:920

9- SEDIMENT DESCRIPTION

SEDIMENTS BENEATH THE TANK FARMS ARE CLASSIFIED ON THE BASIS OF ONE OF NINETEEN SEDIMENT TYPES (SEDIMENT CLASSIFICATION). FURTHER DETAIL IS GIVEN USING MODIFIERS FROM THE GRAIN SIZE NOMENCLATURE. SEDIMENTS WITH CHEMICALLY PRECIPITATED MATERIALS OCCURRING IN THE INTERSTICES BETWEEN GRAINS ARE PREFIXED BY THE TERM CEMENTED. SEDIMENTS WITH GREATER THAN 10% CALCIUM CARBONATE ARE PREFIXED BY THE MODIFIER CALCAREOUS. SEDIMENTS CONTAINING SILICA IN THE INTERSTICES BETWEEN GRAINS ARE MODIFIED BY THE TERM SILICEOUS.

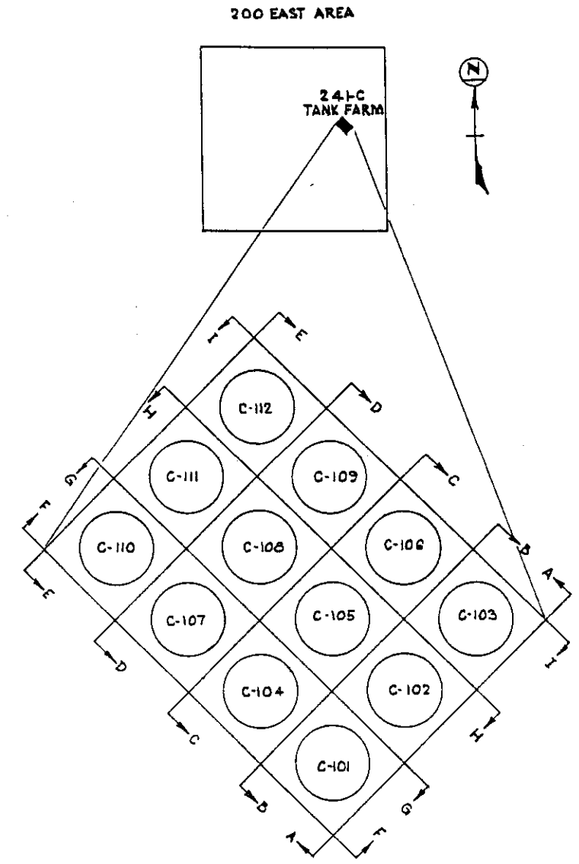
SEDIMENT CLASSIFICATION (MODIFIED AFTER R.L.FOLK, 1968)



GRAIN SIZE NOMENCLATURE (MODIFIED AFTER C.K. WENTWORTH, 1922)

PARTICLE DESIGNATION			PARTICLE DIAMETER (MM)
GRAVEL	BOULDER		> 256
	COBBLE	LARGE	256 - 128
		SMALL	128 - 64
	PEBBLE	VERY COARSE	64 - 32
		COARSE	32 - 16
		MEDIUM	16 - 8
		FINE	8 - 4
		VERY FINE	4 - 2
SAND		VERY COARSE	2 - 1
		COARSE	1 - 0.5
		MEDIUM	0.5 - 0.25
		FINE	0.25 - 0.125
		VERY FINE	0.125 - 0.0625
SILT + CLAY			< 0.0625

200 EAST AREA



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				DRAWN ERICKSON	3/26/75
				SCALE NONE	
				CLASSIFIED BY NOT REQUIRED	DATE
				DECLASSIFICATION NONE	

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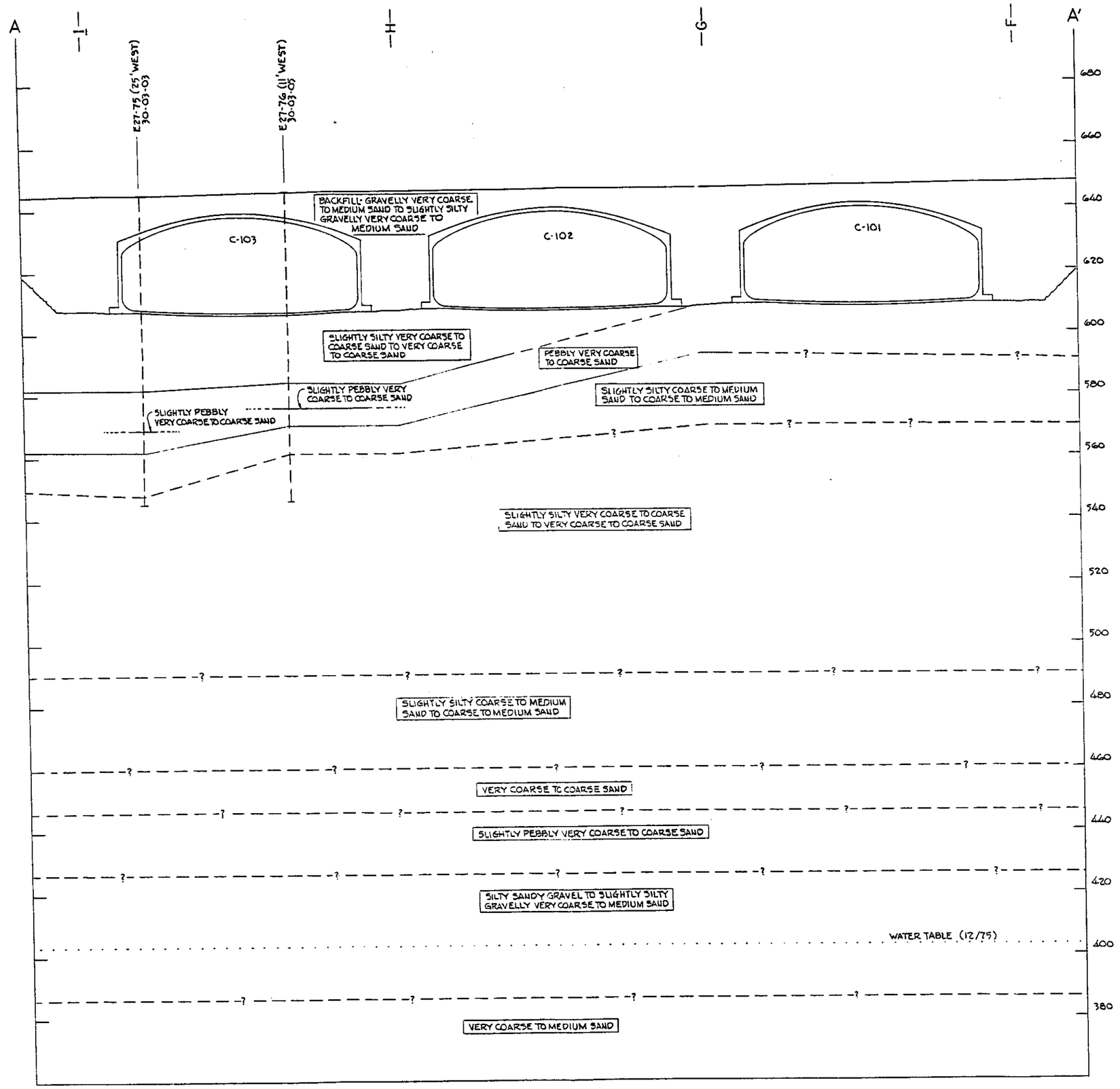
241-C TANK FARM
GEOLOGIC MAP
LEGEND AND PLOT PLAN

PROJECT NO. CK-0069 | DISCIPLINE GEOLOGIC CHARACTERIZATION
FACILITY NO. 241-C | FACILITY NO. 0000
DRAWING NO. H-2-38983 | SHEET NO. — | NO. OF SHEETS —

REVISIONS							
SYMBOL	BY-DATE	PRO	BY-DATE	PRO	REV BY DATE	DESCRIPTION	REV NO.
	APPD. FOR CONFORM WITH SPEC'N CHT		APPD.				

REFERENCE DRAWINGS					
DWG. NO.	REV NO.	DRAWING TITLE OR HOUSE NO.	COMMENT PRT ISSUE NO.	DATE	CHECK PRT ISSUE NO.	DATE	LAST REV.
NEXT USED ON			DRAWING STATUS				0



CROSS SECTION A-A'

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NEXT USED ON		

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MICRO 1"=1'-0"	BY-DATE	FOR	BY-DATE	FOR	REV BY DATE	DESCRIPTION	REV NO.
	APP'D FOR CONFORM WITH DESIGN CRIT		APP'D				

DRAWING STATUS			
COMMENT PRT ISSUE NO.	DATE	CHECK PRT ISSUE NO.	DATE

LAST DWG ON SHT 0

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BY	
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DESIGN D LIEN	5/76
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DRAWN ERICKSON	5/76
SCALE 1" = 16'-0"	
CLASSIFIED IF REQUIRED	DATE
CLASSIFICATION NONE	

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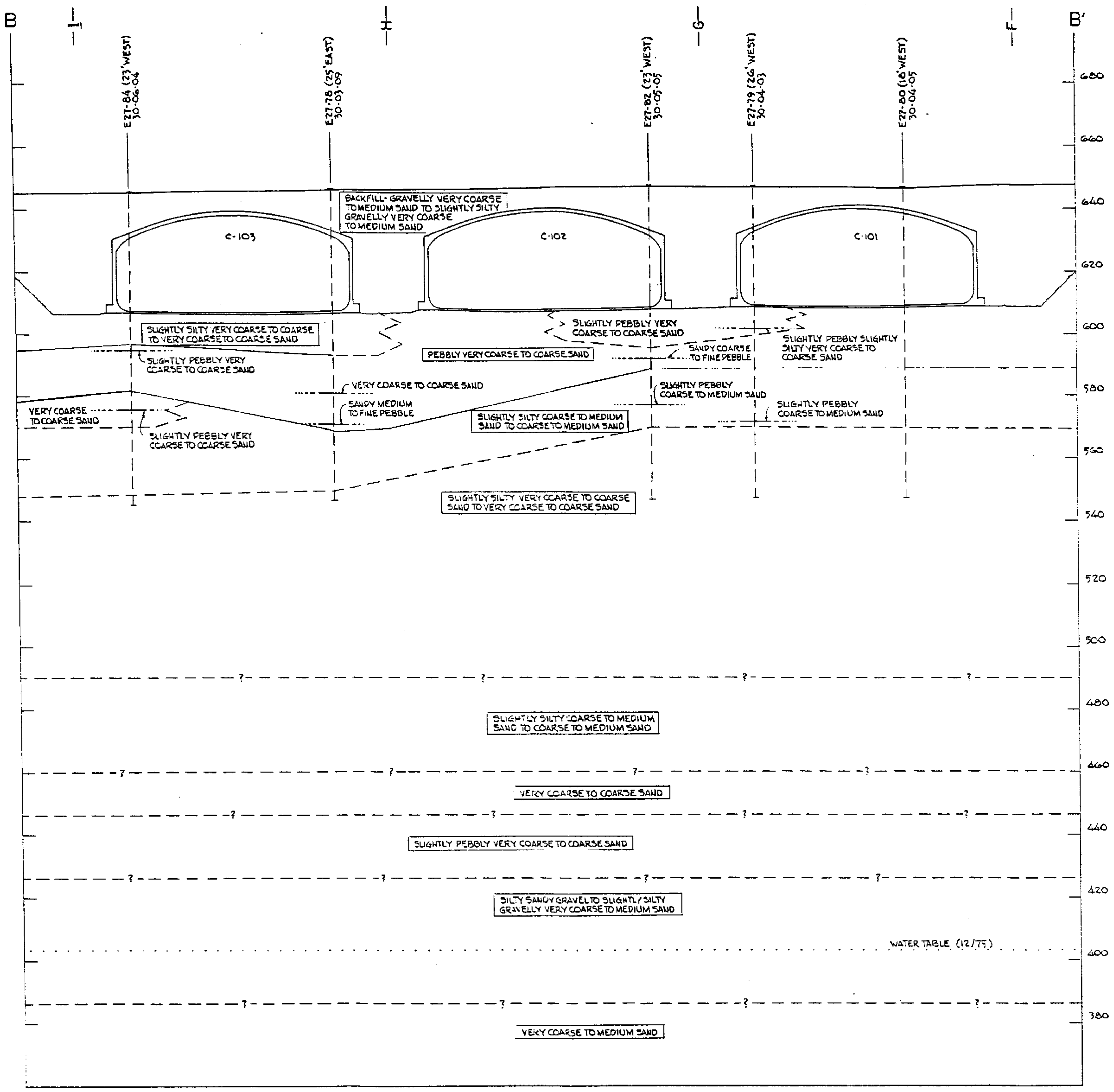
241-C TANK FARM GEOLOGIC CHARACTERIZATION CROSS SECTION A-A

W.O. NO.	CK-0069
PROJ. NO.	241-C
I.R.-DES. NO.	0402 0501
DWG NO.	H-2-70496
ASSIST. DWG. NO. OF PKG.	— —



CROSS SECTION B-B'

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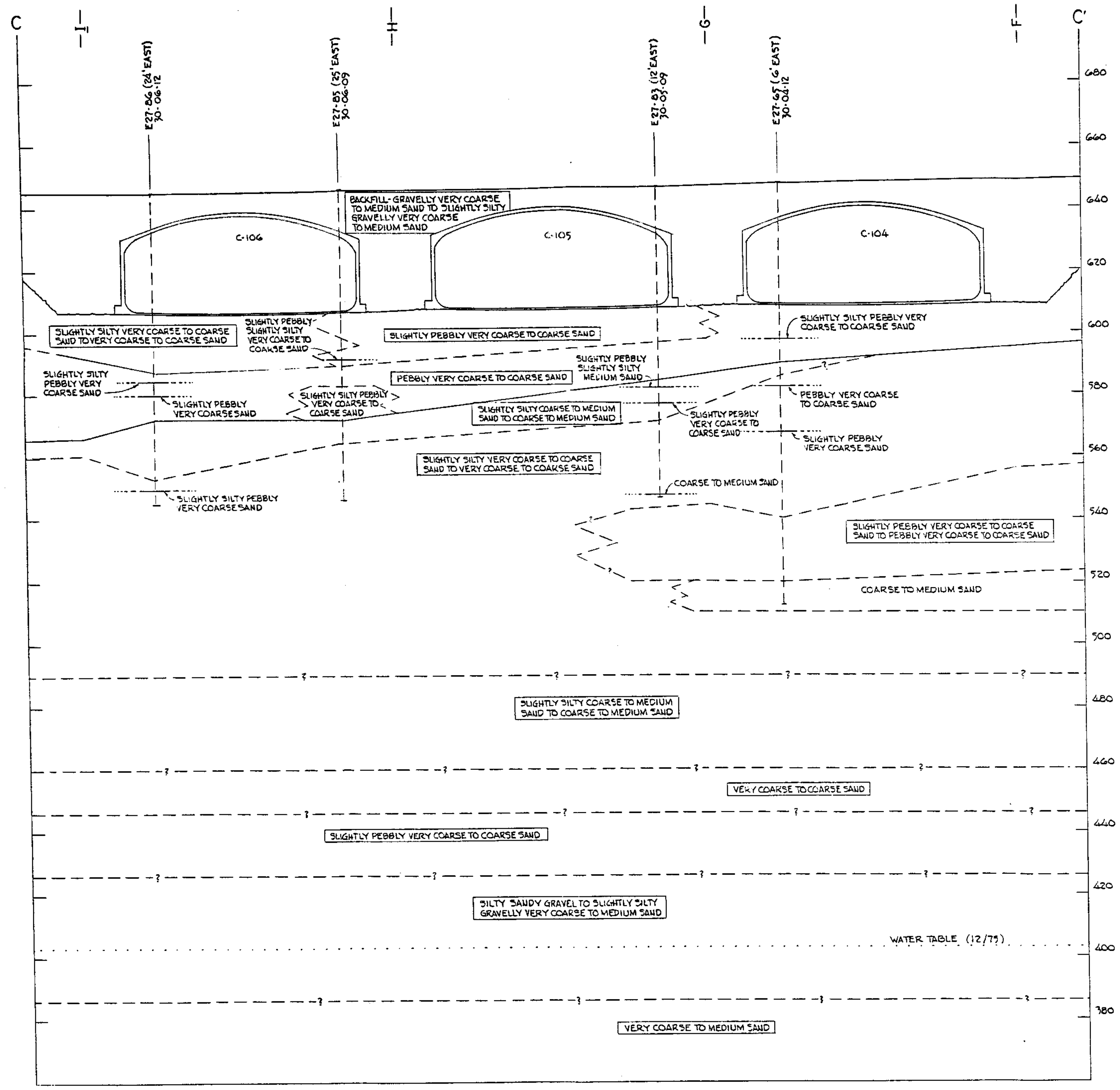
Title	241-C TANK FARM GEOLOGIC CHARACTERIZATION CROSS SECTION B-B'
ENGR	D. LIEN
DRAWN	ERICKSON
SCALE	1" = 16'-0"
PROJ. NO.	CK-0065
PROJ. TITLE	GEOLOGIC CHARACTERIZATION
BLDG. NO.	241-C
INDEX NO.	0402.0501
CLASSIFIED BY	NOT REQUIRED
CLASSIFICATION	NONE
DWG. NO.	H-2-70497
LAST REV.	0

REFERENCE DRAWINGS | NEXT USED ON | REVISIONS | DRAWING STATUS



CROSS SECTION C-C'

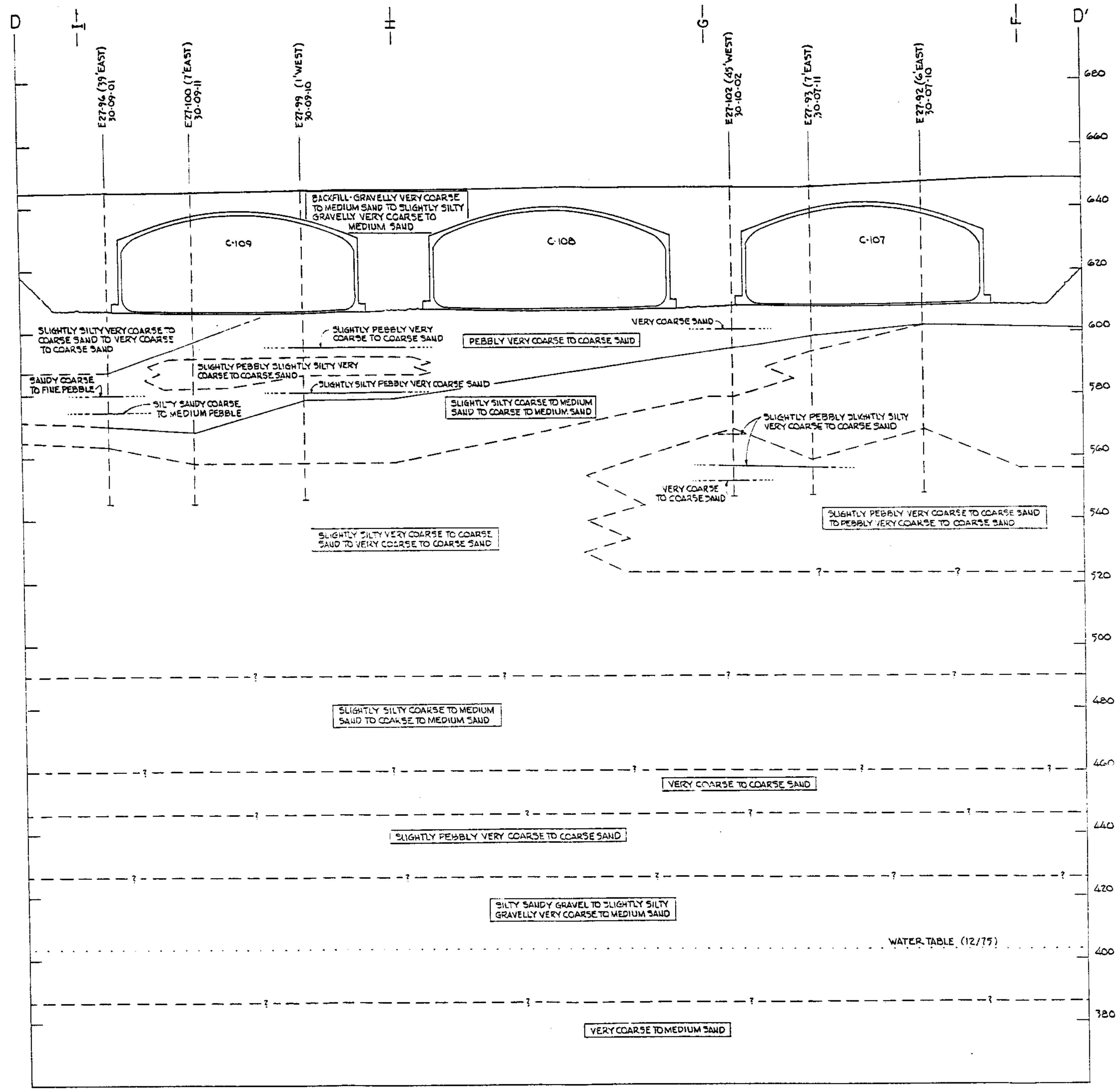
ENERGY RESEARCH & DEVELOPMENT ADMINISTRATION	RICHLAND OPERATIONS OFFICE
VITRO ENGINEERING • architects • engineers, a division of AUTOMATION INDUSTRIES, INC.	
241-C TANK FARM GEOLOGIC CHARACTERIZATION CROSS SECTION C-C'	
DRAWN: ERICKSON	SCALE: 1" = 16'-0"
CHECKED: D. LIEN	W.O. CK-0065
PROJ. TITLE: GEOLOGIC CHARACTERIZATION	BLDG. NO. 241-C
INDEX NO. 0402, 0501	CLASSIFICATION: NOT REQUIRED
NONE	H-2-70498

REFERENCE DRAWINGS

REVISIONS

DRAWING STATUS

NEXT USED ON



CROSS SECTION D-D'

REFERENCE DRAWINGS	
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REVISIONS	
DRAWING STATUS	

ENERGY RESEARCH & DEVELOPMENT ADMINISTRATION
RICHLAND OPERATIONS OFFICE

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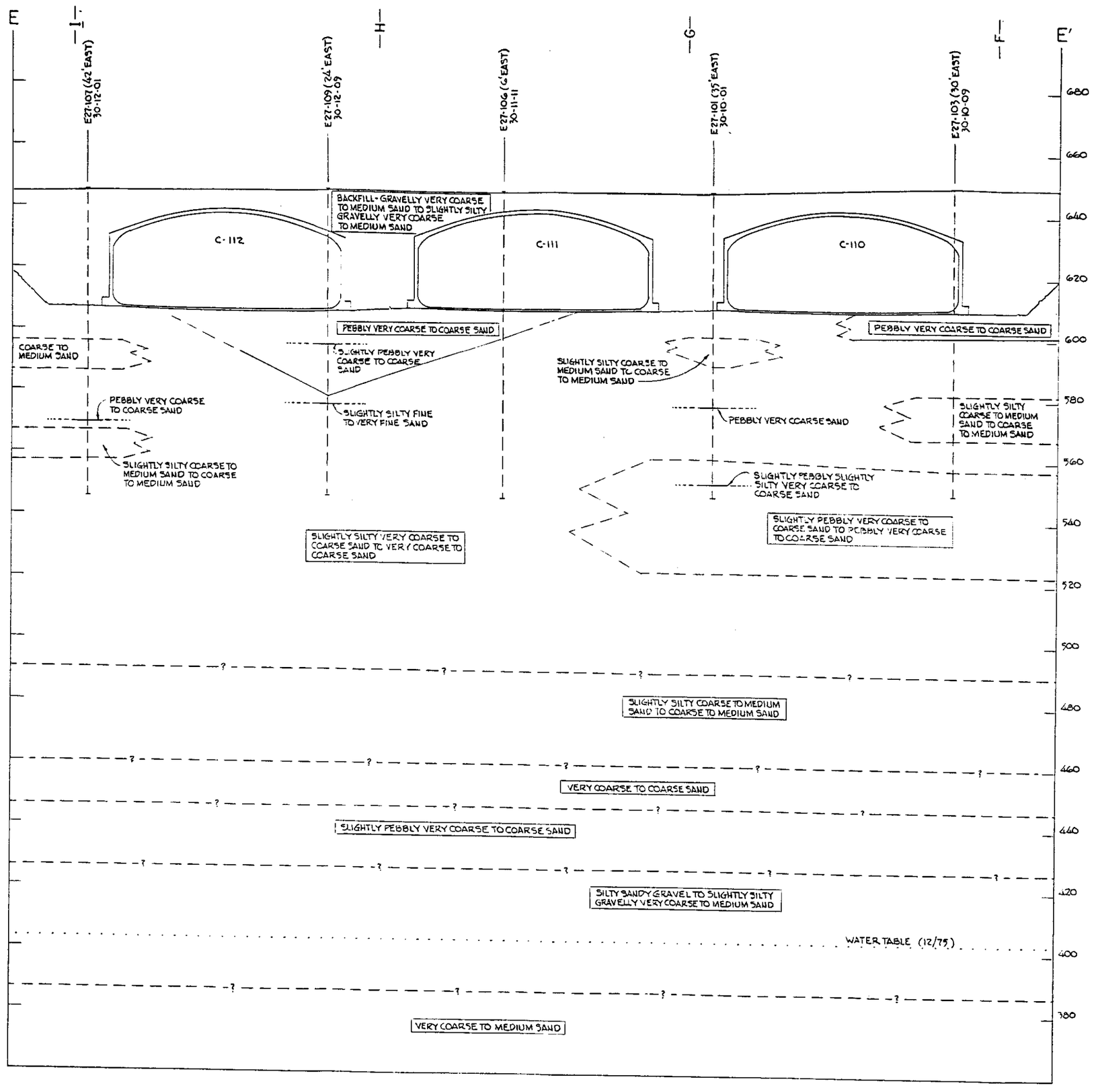
a Division of AUTOMATION INDUSTRIES, INC.

241-C TANK FARM
GEOLOGIC CHARACTERIZATION
CROSS SECTION D-D'

SCALE	1" = 16'-0"
CLASSIFIED BY	NOT REQUIRED
W.O. NO.	CX-0065
BLDG. NO.	241-C
PROJ. TITLE	GEOLOGIC CHARACTERIZATION
INDEX NO.	0402.0501
CLASSIFICATION	NONE
DWG. NO.	H-2-70499
SHEET NO.	-
REV	0



CROSS SECTION E E'

DWG. NO.	REV. NO.	DRAWING TITLE OR INDEX NO.
REFERENCE DRAWINGS		
NEXT USED ON		

NO.	BY-DATE	FOR	BY-DATE	FOR	REV. BY DATE	DESCRIPTION	REV. NO.
1 OF 2	APPD FOR CONFORM WITH DESIGN CRIT		APPD			REVISIONS	
2 OF 2	COMMENT PRT ISSUE NO.		DATE	CHECK PRT ISSUE NO.		DRAWING STATUS	

APPD. FOR CONFORMANCE WITH DESIGN CRITERIA — DATE
BY —
FOR —
APPD
PDE L. Lukes/FEIMS 7/28/76
ENGR D. LIEN 7/27/76
QA APPD. T. Hagaman 7/28/76
CHECKED
DRAWN E. ATKINSON 7/27/76
SCALE 1" = 16'-0"
CLASSIFIED BY — DATE —
CLASSIFICATION NONE

ENERGY RESEARCH & DEVELOPMENT ADMINISTRATION
RICHLAND OPERATIONS OFFICE
NITRO ENGINEERING • architects • engineers
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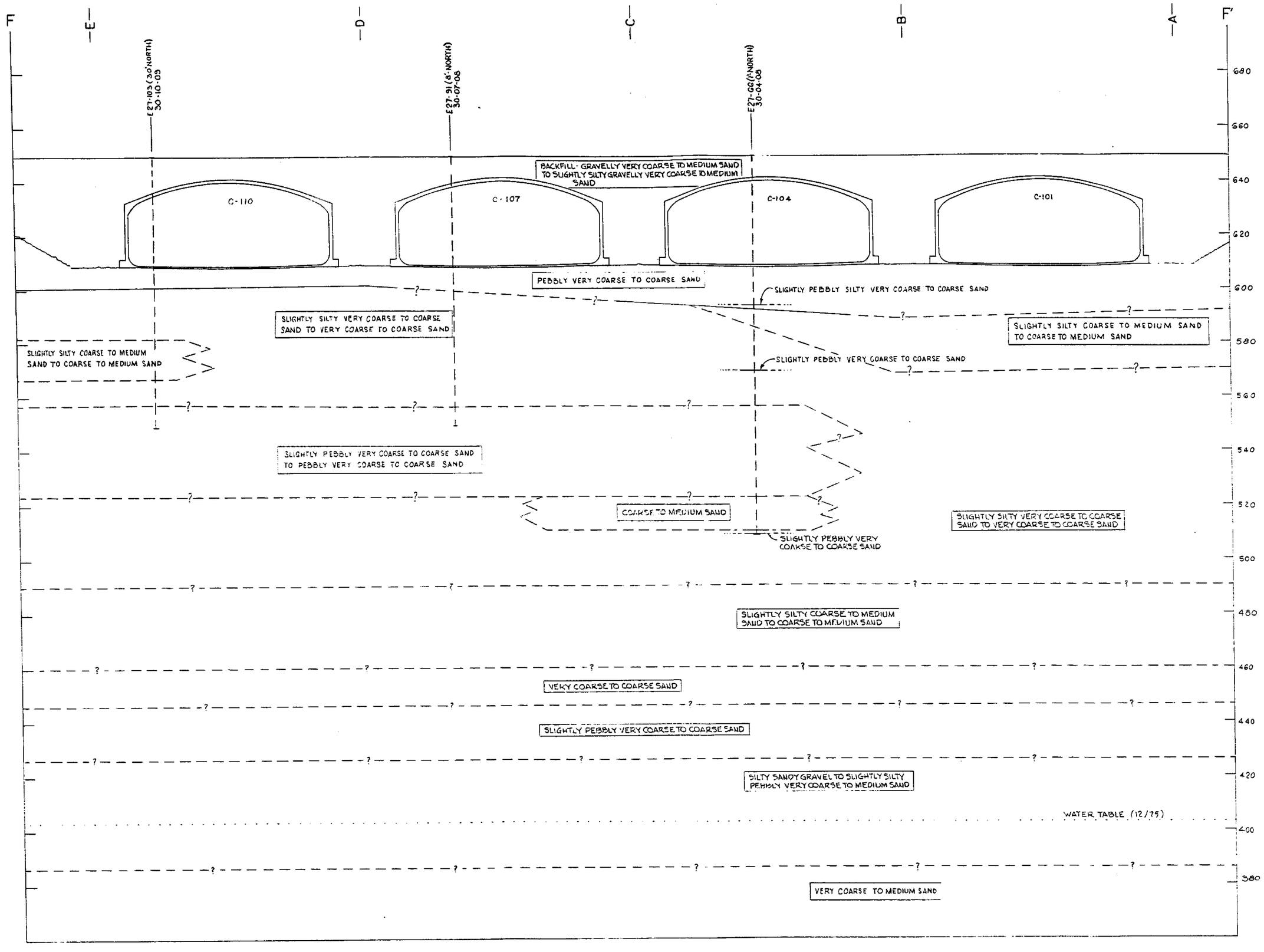
241-C TANK FARM GEOLOGIC CHARACTERIZATION CROSS SECTION E-E'

WBS NO. WBS 0.0.03	CK-0005
J.O. OR PROJ. NO.	241-C
J.O. OR PROJ. TITLE	GEOLOGIC CHARACTERIZATION
ISSUE NO.	0402.0501
DWG. NO.	H-2-70500
SHEET NO.	—
NO. OF SHTS.	—



CROSS SECTION F-F'

				BY-DATE	FOR	BY-DATE	FOR	REV BY DATE	DESCRIPTION	REV NO.	APPD FOR CONFORMANCE WITH DESIGN CRITERIA	BY	DATE
												FOR	
												APPD	
											BSC Engineering		4/4/78
											DRWN D LIENU		4/4/78
											DR APPD Tim Carmichael		4/4/78
											CHECKED		
											DRAWN CR CLEVELAND		4/4/78
											SCALE 1" = 16'-0"		
DWG. NO.	REV NO.	DRAWING TITLE OR INDEX NO.		REVISIONS							CLASSIFIED BY NOT REQUIRED		
REFERENCE DRAWINGS				COMMENT PRT ISSUE NO.		DATE	CHECK PRT ISSUE NO.		DATE	LAST NO.	CLASSIFICATION NONE		
NEXT USED ON				DRAWING STATUS						5			

ENERGY RESEARCH & DEVELOPMENT ADMINISTRATION
RICHLAND OPERATIONS OFFICE

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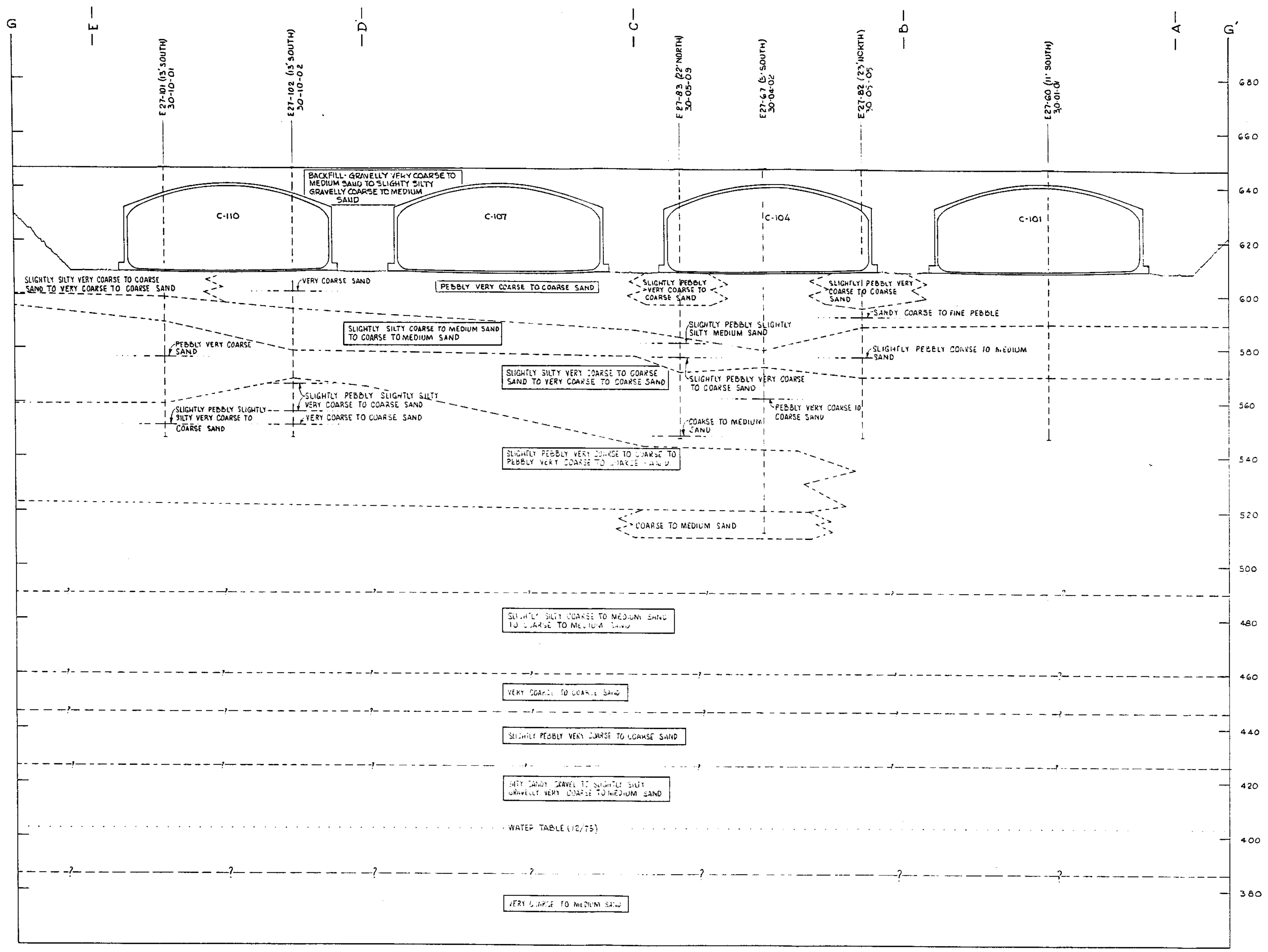
241-C TANK FARM GEOLOGIC CHARACTERIZATION CROSS SECTION F-F'

PROJ NO W.O.N. CK0065 | PROJ TITLE: GEOLOGIC CHARACTERIZATION
BLDG. NO. 241C | ISSUE NO. 0402-0501
DATE | SHT NO OF NOTE
DWG NO H-2-70501 | - | -



CROSS SECTION G-G'

REFERENCE DRAWINGS		
DWG. NO.	REV NO.	DRAWING TITLE OR WORK NO.

NEXT USED ON

REVISIONS | DRAWING STATUS

ENERGY RESEARCH & DEVELOPMENT ADMINISTRATION
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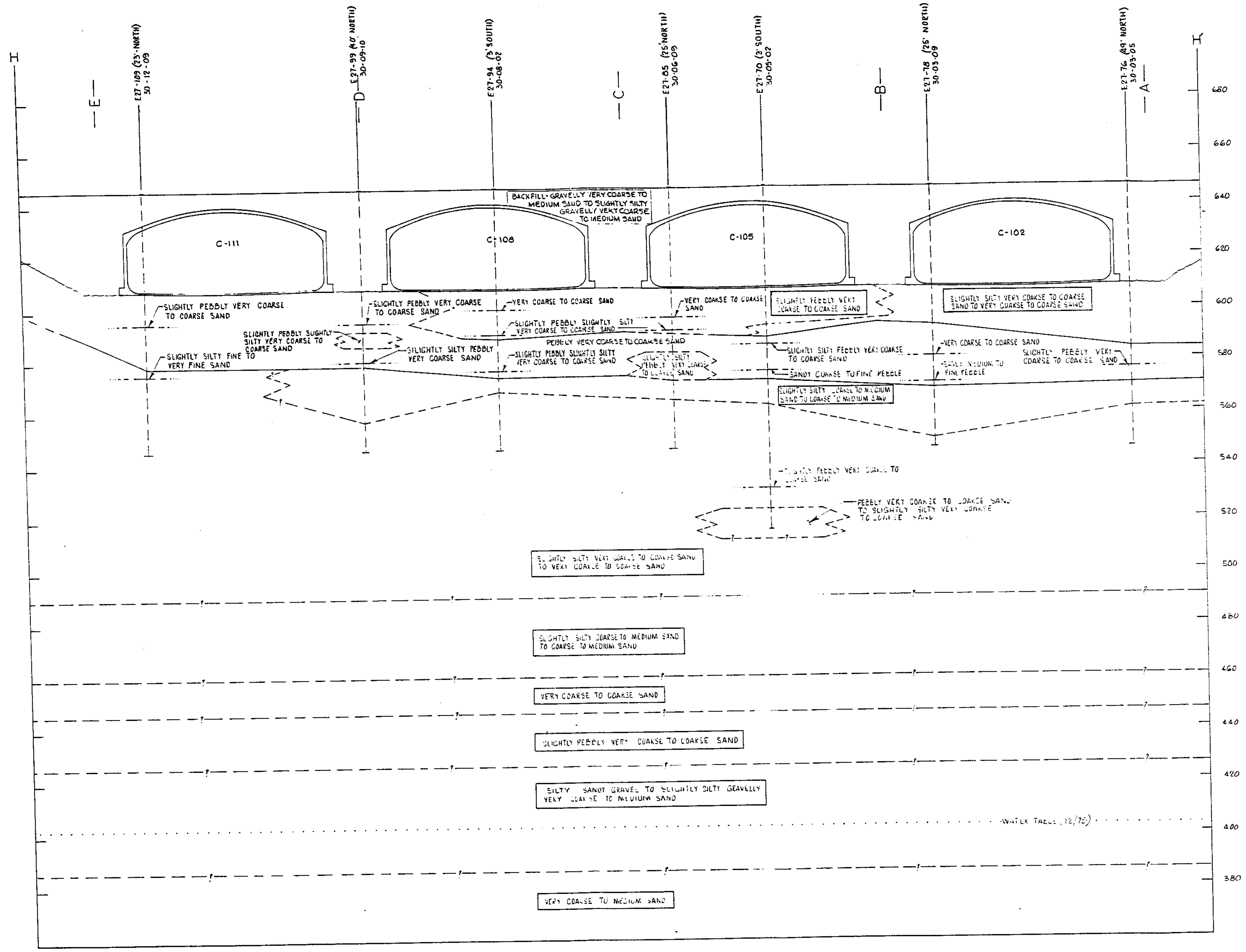
241-C TANK FARM
GEOLOGIC CHARACTERIZATION
CROSS SECTION G-G'

DRAWN: R.L. HUDSON
SCALE: 1" = 16' 0"
CLASSIFIED BY: NOT REQUIRED
CLASSIFICATION: NONE
PROJ NO. W.O. NO. C40569
PROJ TITLE: GEOLOGIC CHARACTERIZATION
BLDG NO.: 241-C
INDEX NO.: 0402-0501
DWG NO.: H-2-70502



CROSS SECTION H-H'

DWG. NO.	REV NO.	DRAWING TITLE			
REFERENCE DRAWINGS					
NEXT USED ON					

REVISIONS

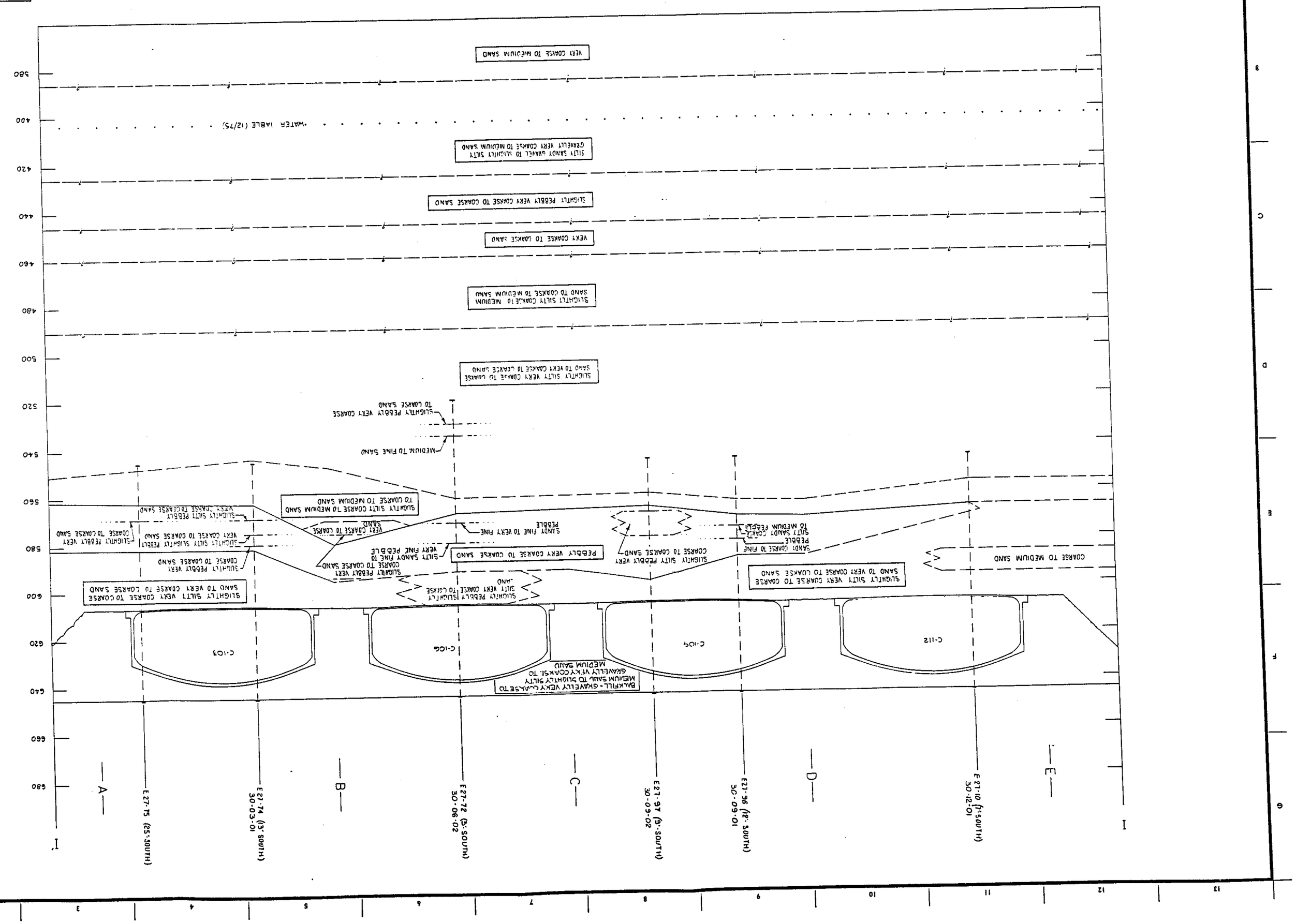
DRAWING STATUS

ENERGY RESEARCH & DEVELOPMENT ADMINISTRATION
RICHLAND OPERATIONS OFFICE
Atlantic Richfield Hanford Company
Richland, Washington 99352

241-C TANK FARM
GEOLOGIC CHARACTERIZATION
CROSS SECTION H-H'

DRAWN HODGSON
SCALE 1" = 16'-0
CLASSIFIED BY NOT REQUIRED
CLASSIFICATION NONE
BLDG. NO. 241-C
PROF TITLE GEOLOGIC CHARACTERIZATION
INDEX NO. 0402.0501
DWG NO. H-2-70504

CROSS SECTION I - I'



ENERGY RESEARCH & DEVELOPMENT ADMINISTRATION RICHLAND OPERATIONS OFFICE	APPR. FOR COMPLIANCE WITH DESIGN CRITERIA	DATE	
VITRO ENGINEERING • richmond, calif. • engineers a division of AUTOMATION INDUSTRIES, INC			
241-C TANK FARM GEOLOGIC CHARACTERIZATION CROSS SECTION I-I'	DESIGNED BY		
	DRAWN	JOHNSON	
	CHECKED		
	QA		
	APPROVED		
Project Title	AS REQUESTED	DATE	
W.O. No. CX-00535 / GEOLOGIC CHARACTERIZATION	SCALE	1" = 10'-0"	
241-C / 04.02.0501	CLASSIFICATION	NONE	
H-2-70503	- / -		

REVISIONS							DRAWING STATUS
DESCRIPTION	REV BY	DATE	APPR. FOR COMPLIANCE WITH DESIGN CRITERIA	APPR. FOR CONSTRUCTION	APPR. FOR CONSTRUCTION CHANGE	DRAWING NO.	

REFERENCE DRAWINGS		
DRAWING TITLE OR BASIS	DWG. NO.	REV.

NEXT USED ON	
DWG. NO.	

CONSTRUCT PART ISSUE NO.	DATE	CHECK PART ISSUE NO.	DATE

DWG. NO.	REV NO.	DRAWING TITLE OR INDEX NO.

REFERENCE DRAWINGS

NEXT USED ON

REV NO.	DESCRIPTION	BY-DATE	FOR	BY-DATE	FOR	APPD BY DATE

MICRO FILM: APPD FOR CONFORM WITH DESIGN CRIT

REVISIONS

COMMENT PRT ISSUE NO. — DATE — CHECK PRT ISSUE NO. — DATE

DRAWING STATUS

LAST REV. 0

APPD. FOR CONFORMANCE WITH DESIGN CRITERIA BY — FOR		DATE
APPD		
APPD	RRUSHER	3/4/76
ENGR D. LIEN		2/24/76
QA APPD		3/24/76
CHECKED		
DRAWN ERICKSON		7/3/76
SCALE 1" = 16'		
CLASSIFIED BY NOT REQUIRED		DATE
CLASSIFICATION NONE		

ENERGY RESEARCH & DEVELOPMENT ADMINISTRATION
RICHLAND OPERATIONS OFFICE

VITRO ENGINEERING • architects • engineers
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241-C TANK FARM
GEOLOGIC CHARACTERIZATION
BASE OF BACKFILL

PROJ NO W O NO	PROJ TITLE
CK-0065	GEOLOGIC CHARACTERIZATION

BLDG. NO.	INDEX NO.
241-C	0111

DWG NO.	SHEET NO.	NO. OF SHTS
H-2-70495	—	—